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EXAMINER
LAROSE, COLIN M

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 December 2005</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 22 December 2005 has been entered.

Response to Amendment and Arguments

2.   Applicant has perfected the priority of the present application and therefore disqualified

Fu as prior art. However, new grounds of rejection appear below based on newly-discovered

prior art.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1, 2-9, 12-16, and 20-24 are rejected under 35 U.S.C. 102(e) as being anticipated

by U.S. Patent 6,002,800 by Donelly et al. ("Donelly").

Regarding claim 1, Donelly discloses an image recognition device (figures 1 and 2), for detecting arbitrary images, comprising:

element matching means (detection module 14) arranged and configured to match each of a plurality of input pattern elements obtained from an input image with corresponding target pattern elements obtained from a target image (column 5, line 25 through column 6, line 35: input pattern elements on bank notes are matched to templates corresponding to pattern elements of a target bank note); and

pattern detection means (detection module 14) arranged and configured to detect relative positions of said plurality of input pattern elements compared with multiple magnification reference arrangement data of each of said target pattern elements in order to recognize whether said input image includes said target image (column 12, line 33 through column 13, line 15 and column 14, line 66 through column 15, line 42: the multiple magnification range data for each template is matched with cells from the inputted image in order to detect the positions and presence of a target image);

wherein said multiple magnification reference arrangement data corresponds to magnification levels no greater than a level at which a human eye can distinguish between an original and a non-zero magnification of the original (column 8, lines 32-47: range data corresponding to a scaling of 95%-105% of the original target size is utilized for the matching process).

Regarding claim 2, Donelly discloses an image recognition device (figures 1 and 2), for detecting arbitrary images, comprising:

a dictionary generating unit arranged and configured to store dictionary data for each of a

plurality of pattern elements obtained from a target pattern (ROM 15);

an element matching unit (Detection ASIC 16) arranged and configured to compare and

match input image pattern data against said dictionary data stored in said dictionary generating

unit (column 5, line 25 through column 6, line 35 and column 15, lines 27-42: input pattern

elements on bank notes are matched to templates corresponding to pattern elements of a target

bank note stored in ROM 15);

an arrangement data generating unit (Detection Module 14) which stores the position data

representing an arrangement of each of the target pattern elements at a plurality of

magnifications, each of said plurality of magnifications being no greater than a level where a

human eye can distinguish between an original and a non-zero magnification of the original

(column 12, line 33 through column 13, line 15 and column 14, line 66 through column 15, line

42: the multiple magnification range data for each template to be matched with cells from the

inputted image in order to detect the positions and presence of a target image are

stored/generated by the detection module 14); and

a pattern detection unit (Detection Module 14) which based on the output of said element

matching unit and said position data from said arrangement data generating unit, determines

whether said target pattern can be found in said input image pattern data (column 12, line 33

through column 13, line 15 and column 14, line 66 through column 15, line 42: the multiple

magnification range data for each template is matched with cells from the inputted image in

order to detect the positions and presence of a target image).

Regarding claims 3-6, Donelly further discloses that the dictionary generating

unit, the element matching unit, the arrangement data generating unit, and the pattern detection

unit comprising software routines (see e.g. columns 26-28).

Regarding claim 7, Donelly discloses an image processing device (figures 1 and 2), for

detecting arbitrary images at multiple magnification levels each below a threshold where said

magnification can be readily identified by a human eye as a non-zero magnified version of an

original, the device comprising:

an element matching means (Detection Module 14) to match a plurality of input pattern

elements obtained by dividing an input image into a plurality of regions with the corresponding

target pattern elements of a target pattern (see e.g. column 5, lines 65-67);

a pattern detection means (Detection Module 14) to detect relative positions of said

plurality of input pattern elements compared with a reference arrangement data at multiple

magnifications of each of said target pattern elements in order to recognize whether said input

image includes said target pattern (column 12, line 33 through column 13, line 15 and column

14, line 66 through column 15, line 42: the multiple magnification range data for each template is

matched with cells from the inputted image in order to detect the positions and presence of a

target image) ; and

a control means (Controller 12) to control output of said input image to an output device

when said pattern detection means recognizes said input image includes said target pattern.

Regarding claim 8, Donelly further discloses that the output device comprises a printer

(e.g. printer 4, figure 1).

Regarding claim 9, Donelly further discloses a scanner for inputting the input image

(scanner 2).

Regarding claim 12, Donelly further discloses a personal computer to facilitate copying

of said input image (computer 3).

Claim 13 is drawn to a recording medium containing computer code for implementing an

image recognition method for arbitrary images which corresponds to the device of claim 1.

Donelly discloses a computer readable medium in figure 2 and columns 26-28.

Regarding claim 14, Donelly discloses a method of processing an image, said method

comprising:

inputting a reference image, said reference image being an arbitrary image (i.e. a

reference image is necessarily inputted so templates can be extracted from it);

dividing said reference image into a plurality of target pattern elements (figure 4);

determining reference arrangement data for each of said target pattern elements at a

plurality of magnifications, said plurality of magnifications being no greater than a level where a

human eye can distinguish between an original and a non-zero magnification of said original

(column 8, lines 32-47: reference arrangements data corresponding to multiple magnifications

within the range of 95%-105% of the original target pattern is determined);

inputting data for an input image (e.g. input image via scanner 2);

dividing said input image into a plurality of input elements corresponding to said target

pattern elements of said reference image (column 5, lines 65-67); and

comparing said target pattern elements and said input elements (column 12, line 33

through column 13, line 15 and column 14, line 66 through column 15, line 42: the multiple

magnification range data for each template is matched with cells from the inputted image in

order to detect the positions and presence of a target image).

Regarding claim 15, Donelly discloses comparing positions of said target pattern

elements and said input elements relative to each other using said reference arrangement data

(i.e. Donelly compares corresponding cells of an input image and target pattern image using the

arrangement data).

Regardin claim 16, Donelly discloses the method of claim 14 further comprising halting

if said target pattern elements include said input elements based on said comparing (e.g. column

4, lines 60 et seq.: printing is halted if a target pattern corresponding to a bank note is detected).

Regarding claims 20-24, Donelly discloses a magnification level no greater than 15%

(i.e. magnification level between 95 and 105% -- column 8, lines 32-47).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7.   Claims 10 and 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donelly.

Regarding claims 10 and 11, Donelly does not expressly disclose inputting an image via floppy disk or digital camera. The Examiner takes Official Notice that inputting images for processing via these methods was well known in the art at the time of the invention. It would have been obvious to one of ordinary skill in the art for Donelly to allow an image to be inputted in any of a variety of manners corresponding to a specific implementation or operating environment incorporating Donelly's teachings.

8.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donelly in view of U.S. Patent 6,185,321 by Fukushima et al. ("Fukushima").

Regarding claim 18, Donelly does not appear to disclose reducing the resolution of the input image if the target pattern elements include the input elements, as claimed.

Fukushima discloses an image copying apparatus. In particular, Fukushima teaches that when an input pattern corresponding to a copy-prohibited image is detected in a scanned image, it is advantageous to lower the quality of the input image in order "to prevent a crime." This entails lowering the resolution of the input image when the pattern corresponding to the copy-prohibited target image is detected to a sufficient accuracy (see column 23, line 59 through column 24, line 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Donelly by Fukushima to lower the resolution of the input image when a target pattern is contained therein, since Donelly's disclosure is directed to determining whether an input image constitutes a copy-prohibited document, and Fukushima discloses that when an input

image corresponds to a copy-prohibited document based on identifying pattern(s) within the

input image, it is conventional and advantageous to lower the resolution of the input image in

order "to prevent a crime" by only allowing the copy-prohibited document to be printed at a

degraded quality.

9.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination

of Donelly and U.S. Patent 5,583,614 to Hasuo et al. (hereinafter "Hasuo").

        Regarding claim 17, Donelly does not appear to disclose changing the color of a

reproduction of said input image if said target pattern elements include said input elements based

on said comparing. However, Hasuo teaches outputting an image in a different color if it is

determined that an input image is money (i.e., should not be copied) based on a comparison

(Fig.6). It would have been obvious to one of ordinary skill in the art to employ Hasuo's

technique in Donelly's method because this would allow a person to easily see that a printed

document is a copy, and not an original. This would be important for documents which should

not be copied exactly, such as money, for example.

10.   Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination

of Donelly and U.S. Patent 5,257,119 to Funada et al. (hereinafter "Funada").

        Regarding claim 19, Donelly does not appear to disclose superimposing an alphanumeric

character on top of a reproduction of said input image if said target pattern elements include said

input elements based on said comparing. However, Funada teaches superimposing alphanumeric

characters on top of a reproduction of an input image when it is determined that the input image

is confidential based on the presence of certain information in the image (e.g., Fig.10; column 8, line 46 to column 9, line 11). It would have been obvious to one of ordinary skill in the art to employ Funada's technique in Donelly's method because this would allow a person to easily see that a printed document is a copy, and not an original. This would be important for documents which should not be copied, such as confidential documents, for example.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu, can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Colin LaRose
Group Art Unit 2627
6 March 2006